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09/456,027	12/03/1999	GAURAV BANGA	NAP-042	5872

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EXAMINER

CHU, GABRIEL L

ART UNIT	PAPER NUMBER
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2184

DATE MAILED: 06/04/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

PD

Office Action Summary

Application No.

09/456,027

Applicant(s)

BANGA, GAURAV

Examiner

Gabriel L. Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 6, 16, 17, 19, 21, 30, 31, 33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6327677 to Garg et al. Referring to claims 1, 16, and 30, Garg et al. disclose repeatedly reviewing monitoring statistics repeatedly reviewing ongoing monitoring statistics regarding operation of a server, said steps of reviewing being performed at least as often as a selected time period (From the abstract (with emphasis), "A system is provided that monitors a network environment. The system **collects recent data** associated with operation of the network environment. The network environment is analyzed by comparing the collected data with historical data associated with the operation of the network environment. The system determines whether a problem or a potential problem exists based on the analysis of the network environment. The historical data associated with the operation of the network environment is represented in multiple cognitive signatures. The system regularly updates the historical data to include the recently collected data." Further, from line 50 of column 4, "For example, network monitor 22 can monitor the CPU performance, memory utilization, and application response time of workstations and servers contained in the network environment."); processing said monitoring statistics using a diagnostic

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software module, in response to said steps of repeatedly reviewing (From line 3 of column 6, "Analysis module 38 receives collected data from data collection module 30, and receives one or more cognitive signatures from cognitive signature module 34. Analysis module 38 analyzes current performance or operation of the network environment by comparing the data collected via the network with the cognitive signatures, which represent past performance or operation of the network environment at similar times for similar devices, systems, or applications. Analysis module 38 may also compare the current data collected with one or more threshold values."); wherein said diagnostic software diagnoses a behavior of said file server by comparing said monitoring statistics to rules or patterns representing abnormal states of operation for said file server (From line 14 of column 6, "Based on the results of the analysis performed by analysis module 38, an alarm signal may be communicated to alarm generator 40." Further, from the abstract, "The network environment is analyzed by comparing the collected data with historical data associated with the operation of the network environment." While Garg does not specifically disclose using cognitive signatures regarding "normal" operation, by identifying what is normal, what is abnormal is subsequently identified as well (i.e., anything that is not normal).). Although Garg et al. do not specifically disclose said server can be a file server, using a server to serve files is well known in the art. Examiner takes official notice for file servers. A person of ordinary skill in the art at the time of the invention would have been motivated to use a server as a file server because there is a need to distribute data in a network. Wherein a

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file server would have at least an interface to a network, mass storage accessible through said interface, and a processor that controls access to said mass storage.

Referring to claims 2, 17, and 31, Garg et al. disclose said diagnostic software module includes a pattern matching system and a rule-based inference system (From line 19 of column 14, "By comparing the current data to the previous time period and the next time period, the procedure is able to identify a pattern or event that is shifted in time." Further, from line 66 of column 11, "Analyzer 110 receives current data 112, one or more cognitive signatures 114, one or more analysis rules 116, exception information 118, and signature correlation factors 120.").

Referring to claims 4, 19, and 33, Garg et al. disclose said monitoring statistics include information gathered by at least one software module within an operating system of said file server (From line 14 of column 5, "Network monitor 22 includes a data collection module 30 that collects information from various devices or applications, such as information regarding network utilization (or device utilization), lost packets, response time, or number of errors. Data collection module 30 collects information regarding the operation or performance of the network environment on one or more communication links 31. Data collection module 30 can collect data from any number of networks and any number of network devices or applications.").

Referring to claims 6, 21, and 35, Garg et al. disclose said steps of processing are responsive to a usage profile for said file server (From the abstract, "The network environment is analyzed by comparing the collected data with historical data associated with the operation of the network environment.").

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3. Claims 3, 18, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6327677 to Garg et al. as applied to claims 1, 16, and 30 above, and further in view of US 5920719 to Sutton et al. Referring to claims 3, 18, and 32, although Garg et al. do not specifically disclose information gathered by a first and second software module at differing levels in an operating system, such a method of information gathering is known in the art. An example of this is shown by Sutton et al. From the abstract, "Writer entities register their intent to collect and store performance information in the registry by creating objects, via novel API calls, as nodes organized within the tree structure. Each object node of the registry is named according to a convention that identifies the type of performance data collected by that node. Each object node further represents a single data item having a single data type for collecting the performance and a reference to the actual storage location of its collected performance information." Further, from line 58 of column 5, "The reader entities 310 typically include user application processes 250a-c desirous of obtaining performance information from the registry 400, while the writer entities 320 include those processes along with operating system components, such as device drivers 224, configured to collect performance information and "write" that information to the registry." A person of ordinary skill in the art at the time of the invention would have been motivated to use performance information gathering in a method for monitoring a network because, from Garg et al.'s abstract, "The system collects recent data associated with operation of the network environment. The network environment is analyzed by comparing the collected data with historical data associated with the operation of the network environment."

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4. Claims 5, 7, 20, 22, 34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6327677 to Garg et al. Referring to claims, 5, 20, and 34, Garg et al. disclose that information can be collected at regular intervals, from line 43 of column 6, "Information can be collected from the various network devices and applications at regular time intervals, such as every five minutes. The data collection module maintains a table or other collection of information to identify the various network devices and applications from which data is collected. For each network device, the table identifies the parameters or performance data to be requested and the time interval between requests. Thus, the data collected from the network can be selective with respect to the network devices, applications, interfaces or communication ports within a particular device, and with respect to polling time intervals." Although Garg et al. does not specifically disclose that such an interval can be less than 10 seconds, Garg et al. do disclose that such an interval is a matter of design, "Thus, the data collected from the network can be selective with respect to the network devices, applications, interfaces or communication ports within a particular device, and with respect to polling time intervals."

Referring to claims 7, 22, and 36, although Garg et al. do not specifically disclose said usage profile includes information regarding whether use of said file server includes usage as an ISP, a development environment, or a mail server, such uses for a file server are well known in the art. Examiner takes official notice for using a file server as a mail server (wherein a file is understood to be a basic unit of storage). A person of ordinary skill in the art at the time of the invention would have been motivated to monitor

a file server used as a mail server, and thus create a usage profile in the form of historical data, because, from the abstract, there is a need to determine "whether a problem or a potential problem exists based on the analysis of the network environment".

5. Claims 8-11, 23-26, and 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over "TCP/IP Illustrated Volume 1: The Protocols" by Stevens. Referring to claims 8, 23, and 37, Stevens discloses selecting a set of parameters for a first communication protocol (From the first bullet of page 231, "The requesting end (normally called the client) sends a SYN segment specifying the port number of the server that the client wants to connect to, and the client's initial sequence number".); attempting to communicate, between a point inside a computer and a point outside said computer, using a second communication protocol, said second communication protocol making use of said first communication protocol (From page 33, "IP is the workhorse protocol of the TCP/IP protocol suite. All TCP, UDP, ICMP, and IGMP data gets transmitted as IP datagrams." That is, IP accepts packets from TCP or UDP, adds its own header and delivers a datagram to the data link layer protocol, using TCP, the first communication protocol.); using the second communication protocol to measure a result of said steps of attempting to communicate (IP, being part of the communication process, is used as part of the process of passing values, and those values must be encoded, decoded, modulated, demodulated, or otherwise interpreted and subsequently determined through measuring (ascertaining quantity) the value of data passed using it, in this case, at least the resultant values of the port numbers and initial sequence

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numbers passed back and forth between client and server.); and altering said set of parameters, in response to said result (From page 232, "When each end sends its SYN to establish the connection, it chooses an initial sequence number for that connection. The ISN should change over time, so that each connection has a different ISN." Wherein altering the ISN is done in response to (at least) data passed using TCP/IP, and data passed using TCP/IP is a result of attempting to communicate. Further, actually communicating comprises an attempt to communicate.). Although Stevens does not specifically disclose the system is a file server, using TCP/IP to transfer files is well known in the art. A person of ordinary skill in the art would have been motivated to use TCP/IP to transfer files because it is a widely available method of transferring data between computers. Wherein a file server would have at least an interface to a network, mass storage accessible through said interface, and a processor that controls access to said mass storage.

Referring to claims 9, 24, and 38, Stevens discloses said steps of altering are performed at least as often as a selected time period of less than ten seconds (From page 232, "RFC 793 [Postel 1981c] specifies that the ISN should be viewed as a 32-bit counter that increments by one every 4 microseconds.").

Referring to claims 10, 25, and 39, Stevens discloses said steps of altering are performed repeatedly, whereby a resulting set of parameters allows substantial communication between said first point and said second point (From page 232, "RFC 793 [Postel 1981c] specifies that the ISN should be viewed as a 32-bit counter that increments by one every 4 microseconds. The purpose in these sequence numbers is

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to prevent packets that get delayed in the network from being delivered later and then misinterpreted as part of an existing connection.”).

Referring to claims 11, 26, and 40, Stevens discloses said steps of attempting to communicate are performed using at least one hundred different configurations of said set of parameters (From page 232, “How are the sequence numbers chosen? In 4.BSD (and most Berkeley-derived implementations) when the system is initialized the initial send sequence number is initialized to 1. This practice violates the Host Requirements RFC. (Acomment in the code acknowledges that this is wrong.) This variable is then incremented by 64,000 every half-second, and will cycle back to 0 about every 9.5 hours. (This corresponds to a counter that is incremented every 8 microseconds, not every 4 microseconds.) Additionally, each time a connection is established, this variable is incremented by 64,000.” Therefore, a correct implementation would have been twice 64,000 (128,000) every half-second. Alternatively, the ISN, part of the identified set of parameters port and ISN, will have been incremented 100 times in a span of 400 microseconds.).

6. Claims 13-15, 27-29, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5745669 to Hugard et al. Referring to claims 13, 27, and 41, Hugard et al. disclose tracking configuration changes to a file server (From the abstract, “A computer utility automatically monitors changes in configuration files stored on the computer hard disk.” Further, although Hugard et al. do not specifically disclose the computer is a file server, using a computer as a file server is well known in the art. Examiner takes official notice for file servers. A person of ordinary skill in the art at the

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time of the invention would have been motivated to use a computer as a file server because there is a need to transfer data between computers. Wherein a file server would have at least an interface to a network, mass storage accessible through said interface, and a processor that controls access to said mass storage.); identifying changes in computer operability for said file server that indicate an error or other failure in said file server (From the abstract, "The recovery tool indicates to the user when changes are detected in the configuration files and provides the option to restore the configuration files to their state before they were changed if the computer system operates improperly." Further, see element 210 of figure 2.); relating said changes in said computer operability to timing of said configuration changes (From figure 2, see elements 200, 210, 220, 230, and 240.); and determining, in response to said steps of tracking and of relating, a configuration change most likely to be responsible for said error or other failure in said file server (From figure 2, see elements 230 and 240. Further, from figure 3, see elements 325 and 335.). Although Hugard et al. do not specifically disclose changes in computer operation are determined by monitoring statistics, using numerical data to quantify the state of computer operability is well known in the art. Examiner takes official notice for thresholding. A person of ordinary skill in the art at the time of the invention would have been motivated to use thresholds to determine computer operability because a threshold determines what is acceptable or normal and what is unacceptable or abnormal.

Referring to claims 14, 28, and 42, Hugard et al. disclose including steps of suggesting activities to reverse said configuration changes so as to place said file

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server in an operating state (From the abstract, "The recovery tool indicates to the user when changes are detected in the configuration files and provides the option to restore the configuration files to their state before they were changed if the computer system operates improperly.").

Referring to claims 15, 29, and 43, Hugard et al. disclose said configuration changes include hardware and software configuration changes (From line 16 of column 6, "If no change (decision block 200) has occurred in configuration files since the last configuration backup, the system start-up operations continue through the AUTOEXEC.BAT file, as well-known in the art, and as represented in an action block 205. If the check routine determines that changes have occurred in configuration files, the recovery tool warns the user of the changes and prompts the user to check all software for proper operation, as represented in an action block 210. Along with the warning and prompt to check all software, the recovery tool gives the user the opportunity to obtain more information on the recovery tool. The display screen 211 of FIG. 5 is one possible embodiment of an exemplary screen to prompt the user of changes to the system configuration. In summary, the condition that exists when this screen is displayed is if the configuration has changed, but the user has not been previously notified of any detected changes." Further, from figure 3, see elements 325 and 335. Further, from the abstract, "The recovery tool also provides for monitoring of the CMOS memory which stores computer system operating functions and parameters. If possible corruption of the CMOS memory is detected, the recovery tool restores the contents of the CMOS to their proper state.").

Response to Arguments

7. Applicant's arguments filed 14 April 2003 have been fully considered but they are not persuasive. In response to Applicant's argument regarding claims 1-7 that Garg et al. do not disclose comparing to abnormal states, while Garg does not specifically disclose using cognitive signatures regarding "normal" operation, by identifying what is normal, what is abnormal is subsequently identified as well (i.e., anything that is not normal).

Regarding Applicant's arguments regarding claims 8-11 and 13-15, the grounds of rejection have been changed.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5655081 to Bonnell et al.

US 5668944 to Berry

US 5751964 to Ordanic et al.

US 5758071 to Burgess et al.

US 6237114 to Wookey et al.

US 6496282 to Malik

"Mastering Windows 98, Chapter 29 – Troubleshooting Your Windows 98 Network, Overview" by Cowart

"Peter Norton's Complete Guide to Norton SystemWorks 2.0" by Norton et al.

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9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gabriel L. Chu whose telephone number is (703) 308-7298. The examiner can normally be reached on weekdays with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W. Beausoliel, Jr. can be reached on (703) 305-9713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

gc
May 29, 2003


ROBERT BEAUSOLIEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100